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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/530,278

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Yuji Mizuguchi

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WASHINGTON, DC 20006-1021

EXAMINER

PATEL, DHAVAL V

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/530,278	Applicant(s) MIZUGUCHI ET AL.	
	Examiner DHAVAL PATEL	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5-7,9,10,14 and 16 is/are rejected.
- 7) ☒ Claim(s) 2,4,8,11-13,15 and 17-19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 April 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/5/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. **Fig. 19 thru Fig. 24** should be designated by a legend such as **--Prior Art--** because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1,3,5-7,9,10,14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (hereafter AAPA) in view of Kawada et al. (EP 1331776) (hereafter Kawada) (See IDS).**

Regarding claims 1 and 14, AAPA discloses a data sending device for mapping each symbol of sending data to any one of a plurality of signal levels and sending the sending data, the data sending device comprising:

a data mapping section for mapping the sending data such that a higher/lower relationship of a signal level of each symbol with respect to a reference level is constantly inverted on a symbol by symbol basis (Fig. 18 and Fig. 19, page 1, lines 16-21, bi-phase mark encoding); and

a non-data mapping section (Fig. 19, header pattern) for mapping a non-data section (Fig. 19, header section) transmitted in a state of being distinguished from a data section (Fig. 19 and 20), such that the non-data section includes a distinguishing symbol for distinguishing the data section and the non-data section from each other (page 3, lines 13-16, distinguishing header from data section).

But, AAPA does not specifically disclose distinguishing such that a higher/lower relationship of a signal level of the distinguishing symbol with respect to the reference level is the same as the higher/lower relationship of a symbol immediately before the distinguishing symbol.

In the same field of endeavor, Kawada teaches coding method wherein the coding unit converts a signal into a symbol that enables transmission data comprising 2 or more bits per symbol timing and coding unit map the transmitted symbol on the basis of the previous signal level. Therefore, the signal can be mapped to a signal level other than the signal level to be transmitted on the basis of the previous signal level (page 13, [0108, [0109], Fig. 14, previous signal storage unit (421) and mapping table (422)). As already established that signal can be mapped based on previous signal level, one skilled in the art would easily recognized that one can change the mapping of data and header in a way that the signal level relationship could be same.

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of the invention to combine the teachings of Kawada, into the system of AAPA, so as to change the mapping relationship between the data symbols and header symbols based on previous signal level, the motivation is to digital data transmission with higher resistance to noise (page 3, [0015]).

Claims 3 and 16 are rejected with the same rationale claim 1 is rejected.

Regarding claim 5, AAPA further discloses a data sending device according to, wherein the non-data section is header information added to the data section (Fig. 19).

Regarding claim 6, AAPA further discloses a data sending device, wherein the non-data mapping section (Fig. 19, header section) outputs a symbol stream having a predetermined pattern for distinguishing a header type in addition to the distinguishing symbol (Fig. 19 and 20))

Regarding claim 7, AAPA further discloses a data sending device, wherein based on data indicating the header type, the non-data mapping section selects a symbol stream corresponding to the header type from a plurality of patterns of symbol streams prepared in advance (Fig. 20, B, M and W header patterns).

Regarding claim 9, Kawada further discloses a data sending device, further comprising a previous signal storage section (Fig. 14, 421) for storing outputs from the data mapping section and the non-data mapping section (Fig. 14, signal conversion unit, 423), and supplying the outputs to the data mapping section and the non-data mapping section (Fig. 14).

Regarding claim 10, AAPA discloses a data receiving device for receiving a transmission signal which is sent in the state where each symbol of sending data is mapped to any one of a plurality of signal levels, the data receiving device comprising:

a distinguishing symbol detection section (Fig. 15, 18, 21 and 22 signal level difference evaluation unit) for detecting a distinguishing symbol for distinguishing a data section and a non-data section of the transmission signal from each other based on a change pattern of signal levels of the transmission signal (Fig. 15, 18, 21 and 22, page 2, lines 13-25, distinguishing between bi-phase mark encoded data and header based on changed pattern);

a data determination section for reproducing data from the data section of the transmission signal based on a detection result of the distinguishing symbol detection section (page 2, lines 23-25); and

a non-data determination section for reproducing non-data information from the non-data section of the transmission signal based on the detection result of the distinguishing symbol detection section (Fig. 2, lines 23-25); but AAPA does not specifically disclose wherein when a signal level of a symbol in the transmission signal

and a signal level of an immediately previous symbol thereto have the same higher/lower relationship as each other with respect to a reference level, the distinguishing symbol detection section detects the symbol as a distinguishing symbol.

In the same field of endeavor, Kawada teaches that decoding unit, the previous signal level is stored in the previous storage unit (261) and the signal conversion unit (262) decode the received signal level on the basis of the previous signal level (page 13, [0110]) to retrieve the symbol value (Fig. 18). As already established that signal can be decoded based on previous signal level, one skilled in the art would easily recognized that one can inverse mapping the received signal in such a way that higher/lower relationship between header and data would be same as transmitted side.

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of the invention to combine the teachings of Kawada, into the system of AAPA, so that after signal level difference evaluation, inverse mapping can be done in such a way that higher/lower relationship between header and data symbols could be same, the motivation is to digital data transmission with higher resistance to noise (page 3, [0015]).

Allowable Subject Matter

4. Claims 2,4,8, 11-13,15,17,18,19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DHAVAL PATEL whose telephone number is (571)270-1818. The examiner can normally be reached on M-F 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dhaval Patel/
Examiner, Art Unit 2611
6/11/2008
/Shuwang Liu/
Supervisory Patent Examiner, Art Unit 2611